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General Headquarters, Washington, D. C.

Contents for Week of February 25, 1935. Vol. XIV. No. 2.

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Photograph from E. Gertrude Beaseley

BAMBOO RAKES LIGHTEN THE FUEL GATHERER'S TASK

These fan-shaped, finger-tipped "Madam Butterfly" garden rakes have also found favor in the United States, where they are used to clear leaves from walks and lawns (see Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Bias Bay, Lair of Present-Day Pirates

"SEVENTY children, captured by pirates, rescued by warships and airplanes!" This isn't make-believe, or a movie advertisement, but a real newspaper headline dated February 2, 1935. Almost every child has played at being a pirate. Like Mark Twain's "Tom Sawyer" and "Huck Finn" they have dug for pirate gold in caves, or sailed rafts that, in flights of youthful fancy, have become "pirate galleons, flying the Jolly Roger, in quest of booty on the Spanish Main."

But few youngsters have ever seen a real pirate, or, thrill of thrills, been captured by buccaneers, and then rescued, none the worse for the experience.

Vessel Taken 800 Miles off Course

Yet such an adventure, as exciting as the wildest fiction, befell some 70 children, several of them Americans, off the south China coast early this month. The youngsters and five teachers were held prisoners by Chinese pirates aboard the British coastal steamer *Tungchow* for two and a half days, while the vessel was taken 800 miles off its course in order to land its cargo in a lonely bay.

The pirates bought tickets for the voyage as passengers, and seized the ship at sea. They repainted the funnels and gave the steamer a Japanese name in an effort to avoid detection. But, when a rescue squadron of British planes and warships closed in on the *Tungchow* in true movie style, the pirates fled.

The ship, its youthful voyagers unharmed and cheering wildly, was found 50 miles northeast of Hong Kong, in the vicinity of the notorious pirate lair at Bias Bay.

For many years the district around Bias Bay has had a bad reputation as the headquarters of pirate gangs who infest the China coast. Outwardly the 10,000 people of the Bias Bay region are peaceful farmers, but agriculture merely masks more sinister activities.

Bias Bay residents are always ready to land booty from captured ships and to dispose of it through regular receivers of stolen goods.

How Sailing Ships Were Boarded

During the old sailing days these freebooters usually stopped passing ships by the simple method of stretching a cable between two junks; then, as the rope was caught by the victim's bows, the junks could be swung alongside, so that the boarding of a vessel was an easy matter.

With the coming of steamships, their technique changed to boarding the steamers as passengers and, at the right moment, taking possession, then forcing its officers to sail the ship into Bias Bay for looting. When riding a Chinese coastal steamer to-day, one is comparatively safe from these piratical attacks, but one has the feeling of being aboard a floating jail or prison ship. The first-class quarters and the bridge are usually separated from the rest of the ship by heavy iron grills, and all the ship's officers are armed like policemen.

Many thrilling tales are told of pirate raids on coastal shipping, featured by unusual bravery against heavy odds. Officers sometimes use deep-sea leads and other ready weapons in pacifying pirates, and British judges at Hong Kong and Shanghai deal quick justice to captured outlaws. Death is the penalty for cut-throat leaders.

In these South China waters, too, are other pirate groups, some led by women,

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HERE THE WORLD'S LARGEST MAN-MADE LAKE IS IN THE MAKING

This photograph of Boulder Dam was taken when the huge barrier was about a third completed. It reveals clearly the difficulties faced by engineers, who were forced to bore tunnels to carry the Colorado River around the dam during construction activities. The dam has now reached its full height and already has begun to impound a great reservoir to control floods, develop power, and water more fields. The center of the dam marks the boundary between Arizona (right) and Nevada (see Bulletin No. 3).

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Turkey Unearths Gold Mines of Croesus

TURKEY reports the discovery of the gold mines of Croesus, millionaire king of Lydia in the sixth century, B. C. The richest finds are at Sart, close under the ruins of Sardes, capital of the Lydian empire.

Croesus is reputed to have gathered his fabulous wealth from the golden sands of the Pactolus, a stream which flows through Sardes and into the Hermus (Gediz) River. Midas, King of Phrygia, bathed in the Pactolus, according to legend, to rid himself of the cursed golden touch. The cure worked—and Croesus gained a fortune.

Under Croesus, Lydia grew from a small kingdom to a powerful empire ruling all Asia Minor. The Lydians were supposedly the first people to coin money and to establish a system of currency. Archeologists have found some of the electrum coins struck off in Croesus' mint. Electrum (white gold), a native alloy of gold and silver, was mined on the banks of the Pactolus.

First Commercial Inns

Direct exchange of goods had always restricted commerce greatly up to that time; trade was largely a matter of local transactions. But, with an easy medium of exchange, the Lydians developed an extensive foreign trade. Other new ideas followed the invention of coins. The first commercial inns in the world (see illustration, next page), were established in Lydia; and, appropriately enough, the Lydians are also credited with the invention of dice.

Geography as well as gold made Lydia a great commercial power, for Asia Minor is the land bridge between East and West. Sardes, the capital city, owed a threefold debt to geography. Its location on a high spur of Mount Tmolus (Boz Dağ) made it a natural fortress. Lying some 60 miles northeast of Smyrna (Izmir), it was on the main trade route inland from the Mediterranean.

Below the city stretched the wide valley of the Hermus, fertile granary of the ancient kingdom.

When Croesus asked Solon who the happiest man in the world was, he expected only one answer. Solon, however, mentioned some humble citizens of Athens instead of the wealthy King of Lydia. Events soon proved his wisdom. The rising power of Persia disturbed Croesus, so he determined to make war upon Cyrus.

Delphic Oracle "Straddles Fence"

The Delphic oracle, ambiguous as usual, declared that the expedition would bring destruction to a great empire. Croesus construed this in a favorable light and lost an empire through his mistake.

Cyrus captured Sardes in 546 B. C. Seven years later Babylon fell and Persia was master of the Near East.

Progress in Turkey during the last decade draws a close parallel to the history of ancient Lydia. The modern nation aspires to commercial greatness. Her geographic location is almost as favorable as it was 2,500 years ago. The river valleys are still fertile. Tobacco, wool, cotton, dried fruits, and nuts head the list of exports. Imports of manufactured products are being reduced by the development of local industries.

Gold oiled the wheels of Lydian trade, but modern Turkey is helping trade itself by concentrating on better transportation. New railroads, highways, and bridges are appearing rapidly on the map of Anatolia.

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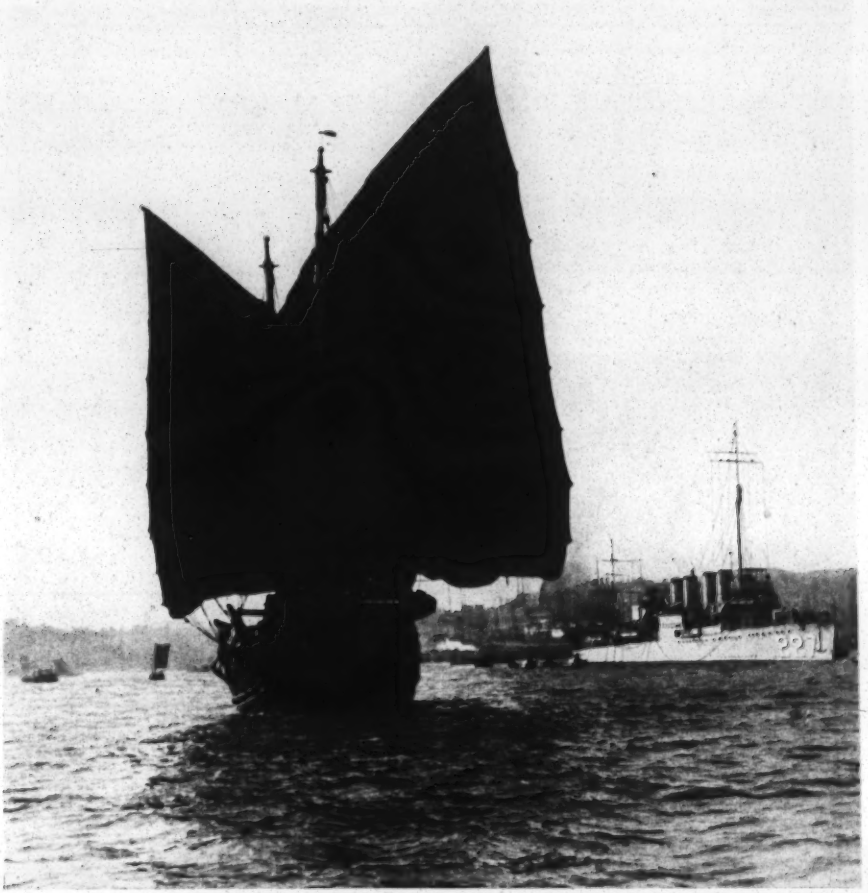
who specialize on fishing fleets and lighterage junks. They operate disguised as fisherfolk, and if they do not loot their victims they exact heavy toll for "protection."

North of the Bias Bay region, and directly astride the Tropic of Cancer, is the important seaport of Swatow, long closed to all foreigners, but now a busy shipping point for linen embroidery and laces. Nearly all of Swatow's exports go to American markets.

See also "Coastal Cities of China," *National Geographic Magaizne*, November, 1934; "Glory That Was Imperial Peking," June, 1933; "Cosmopolitan Shanghai, Key Seaport of China," and "Macao, 'Land of Sweet Sadness,'" September, 1932; "Raft Life on the Hwang Ho," June, 1932; "Life Afloat in China," June, 1927; and "The Road to Wang Ye Fu," February, 1926.

Bulletin No. 1, February 25, 1935.



Photograph courtesy U. S. Navy Recruiting Bureau

JUNKS ARE OFTEN VICTIMS OF PIRATE ATTACKS

Much of China's coastal trade is still carried in these graceful and seaworthy oriental boats. Heavily-laden, this old-time junk with matting sails glides down the Whangpoo, at Shanghai, under the protecting guns of one of the sleek greyhounds of Uncle Sam's Asiatic fleet.

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Boulder Dam Goes to Work

THE closing of one of the 50-foot tunnels by which the Colorado River has been diverted around the site of Boulder Dam for the past two years recently marked one of the final phases of the great irrigation, flood control and power project in Black Canyon. Slowly the water is now creating a lake above the dam—two years ahead of schedule.

Colossal, stupendous, gigantic—these are some of the adjectives worn threadbare by visitors to Boulder Dam when they view the barrier and are told staggering figures and startling facts about the new project, one of the greatest works of man.

It is not the longest dam ever built, but in nearly all other respects it has not even a close competitor. Man has never raised a higher water barrier. The impounded water in the lake will form the largest artificial reservoir in existence. The largest generators ever built will occupy the world's largest power house and produce more than twice the electric power that is produced by the vast Dneprostroy plant in Soviet Russia, now the greatest producer of power.

Higher Than Washington Monument

When workmen finished the excavations for the dam's foundations, a ten-story building could have been placed in the cavity and the roof of the building would not have shown above the old Colorado River bed. When the last batch of concrete for the dam and power plant is poured in June of this year, these units will contain nearly enough material to build a standard, 16-foot concrete highway from Miami, Florida, to Seattle, Washington.

Chemical heat, given off by the drying cement, is dissipated by cold water pumped through 300 miles of one-inch pipe imbedded in the concrete. The dam is 105 feet thicker at the base than the height of the Washington Monument. If the famous obelisk were placed beside the barrier, pedestrians on the highway which will occupy its crest would look down on the Monument's aluminum cap, about 30 feet below.

It will take more than two years to fill the lake. When the water rises to 585 feet deep at the dam, the lake will be 115 miles long. Most of the lake will be within the canyon, spreading in some places as much as eight miles. About 20 miles above the dam, the Virgin River Valley breaks the Nevada side of the deep rocky ravine. A portion of this valley will be flooded and the lake here will be about 30 miles wide.

80,000 Gallons for Every American!

Filled to its capacity, the vast reservoir will contain 80,000 gallons of water for every person in the United States. Only a small proportion of land inundated by the lake was privately owned.

The power house below the dam is a U-shaped building, half in Nevada and half in Arizona. It is a quarter-mile long and as high as a twenty-story building. Light and power for cities and industries many miles distant will be produced by fifteen large and two small generators.

Although the Boulder Dam project is for flood control and irrigation as well as for power production, contracts for power and water, already signed will, in a fifty-year period, pay the cost of the dam, and all equipment, its maintenance and

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Turco-Persian relations are not modeled after the policies of Croesus and Cyrus. Under to-day's leadership the two countries have buried the ancient hatchet, and now there is even talk of a through railway from Ankara to Tehran.

Note: For other material and color photographs of Anatolia see also: "Road of the Crusaders," *National Geographic Magaizne*, December, 1933; "Men and Gold," April, 1933; "Looking in one New Turkey" and "The Kizilbash Clans of Kurdistan," October, 1928; "The Geography of Money," December, 1927; "Skirting the Shores of Sunrise," December, 1926; "Crossing Asia Minor, the Country of the New Turkish Republic," October, 1924; "East of Constantinople," May, 1923; "The Geographical History of Asia Minor," November, 1922; "Asia Minor in the Time of the Seven Wise Men," January, 1920; "The Cone Dwellers of Asia Minor," April, 1919; "The Lost Wealth of the Kings of Midas," October, 1910; and the "Buried Cities of Asia Minor," January, 1909.

Bulletin No. 2, February 25, 1935.

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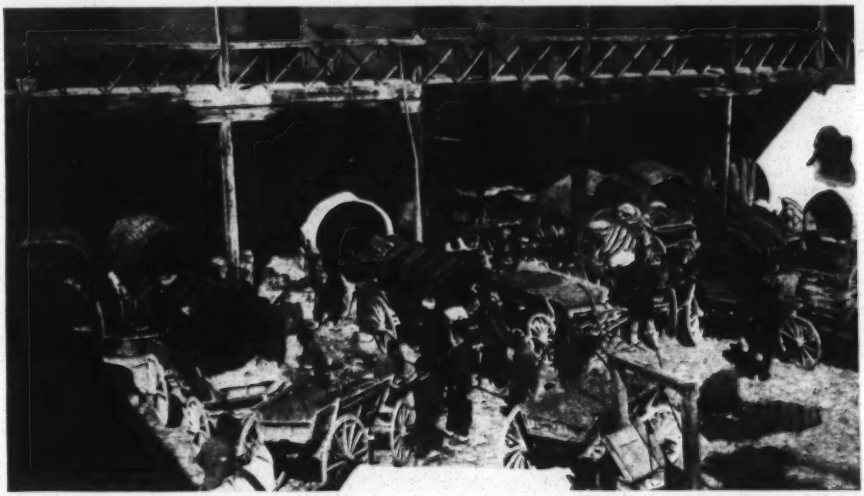

Photograph by Robert Whitney Imbrie

AN EARLY ANCESTOR OF THE WALDORF-ASTORIA

The Anatolian khan is probably the oldest form of hotel in the world. These mud-packed compounds shelter pack animals and carts in an open court, while travelers sleep in booths built around the inside of the walls. The first commercial inns in the world were established in Lydia, now a part of modern Turkey.

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Falconry, Ancient Sport of Kings

DOWN through the ages, until comparatively recent times, falconry has existed both as a sport and as a practical way of hunting small game. The invention of gunpowder and of firearms, however, almost shot falconry out of existence.

A few persons have succeeded in keeping alive the picturesque traditions of this most unusual pastime, both in this country and abroad. Recently, eight Washington, D. C., boys formed a group to revive the ancient sport in the National Capital, and, under an expert tutor, will train their own hawks for use in the chase.

Falcon is the general name for many birds which attack their prey on the wing. Falconry is a sport and art, in which a falcon is taught to take flight from a trainer's extended arm, attack its prey, and, at the command of the trainer, return to him.

Falconry Practiced in Greenland, Iceland, and Europe

The peregrine falcon, one of the most powerful and courageous of birds, is the most widely used bird in falconry. It is very popular in the British Isles. The golden eagle of Scotland is sometimes trained for hunting. In Iceland and South Greenland the Iceland falcon is the favorite hunting bird, while in the Scandinavian countries falconers prefer the gyrfalcon. Even buzzards have been trained to falconry.

Recently when Capt. C. W. R. Knight, a well-known British authority on falconry, was in this country, an American zoologist contended that, while golden eagles had been trained to falconry, the American eagle could not be so trained. When Captain Knight returned to England, he took an American eagle with him. In a few months the imported bird was as adept at falconry as others of Captain Knight's hunters of the air.

Falconry, while practiced to a very limited extent to-day outside of Asia (see illustration, next page) and Europe, was popular two thousand years before the Christian era, when Chinese entertained themselves by hunting game with falcons.

Stone carvings unearthed in the Near East and Egypt indicate that the sport was known in these regions during the same period. Japanese, Indians, and Persians trained falcons as early as the seventh century B. C.

Spread with Roman Empire

Falconry spread over Europe with the expansion of the Roman Empire, but it did not leap the English channel and get a foothold in England until about eleven hundred years ago. There it became the "Sport of Kings." The rank of a British falconer could be ascertained by the kind of birds he owned. The finest birds, of course, belonged to the nobility.

The growth of large cities and industries, the development of the use of firearms which gave impetus to the sport of hunting with guns, and the movement to conserve game caused falconry to lose much of its popularity by the seventeenth century. The birds of prey, which old English falconers valued highly, then became the targets of their sons' high-powered weapons.

In medieval times both men and women took part in falconry, often parading to the hunting field afoot or on horseback, with royal pomp. The birds were transported to the "hawking ground" by servants. Sometimes, however, a favorite bird would grace a proud owner's arm.

Often dogs were taken with the hawking parties to drive prey into the open

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operation. At the end of the period it is estimated that there will also be a surplus fund of $166,000,000.

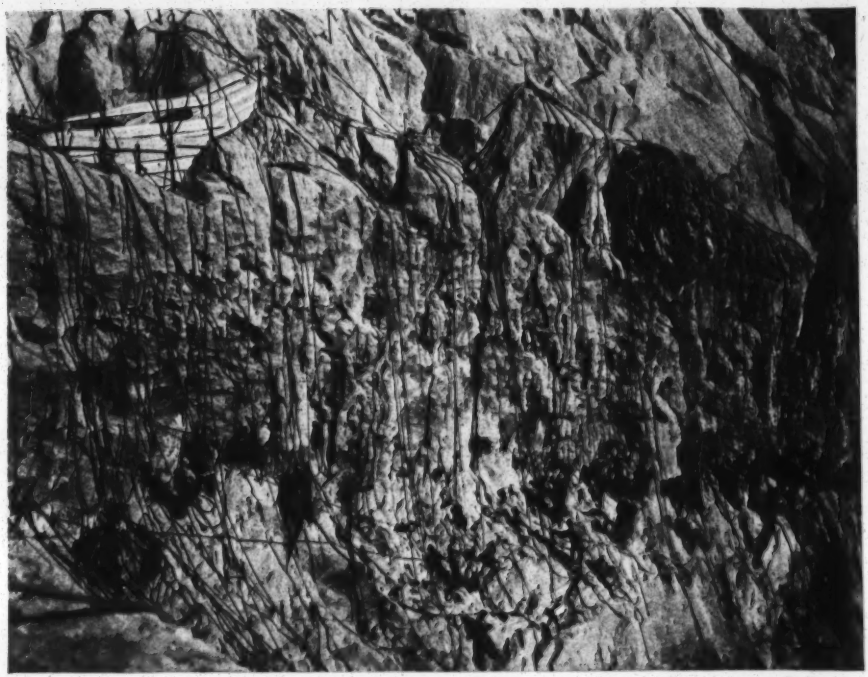
The All-American Canal, a part of the project, will be the third largest canal in the United States—232 feet wide and 20 feet deep. The main canal, which branches off from the Colorado River above Yuma and extends into the Coachella Valley, will be 130 miles long. A branch to Imperial Valley will be 80 miles long. Irrigable land, equal to nearly half the area of New Jersey, can be reached by waters whose flow will be regulated by Boulder Lake.

Before Boulder Dam was conceived, the neighborhood of the dam site was described by a visiting government official as "a hideous desert." Las Vegas, 25 miles west of the canyon, was the nearest town. When government men and contractors were ready to begin construction on the dam in 1931, they saw the need of a city nearer the site than Las Vegas.

Almost overnight, Boulder City, six miles from the dam site, sprang into being. Houses and barracks rose and macadam roads were laid down. Then came theaters, schools, hotels, and shops. The bustling town soon had 5,000 inhabitants, thus becoming Nevada's third largest.

Note: For other data about Boulder Dam, the Colorado River, and the region that will be benefited by the great engineering project, see: "Southern California at Work," *National Geographic Magazine*, November, 1934; "Nature's Scenic Marvels of the West," July, 1933; "Flying," May, 1933; "Colorado, a Barrier That Became a Goal," July, 1932; "Arizona Comes of Age," January, 1929; "Pirate Rivers and Their Prizes," July, 1926; "The Non-Stop Flight across America," July, 1924; and "Surveying the Grand Canyon of the Colorado," May, 1924.

Bulletin No. 3, February 25, 1935.



Photograph from Andrew R. Boone

HUMAN ANTS GNAW AT A CANYON'S WALLS

"High Scalers," suspended on cables hundreds of feet above the Colorado River, make niches for machinery by cutting away the solid rock with air drills. Without the work of these heroic men, the huge Boulder Dam could never have been built.

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A Japanese Bamboo Grove and Thomas A. Edison

IN THE beautiful bamboo grove of the Iwashimizu Shrine near Kyoto a modernistic stone memorial has just been dedicated to Thomas A. Edison. Why should this park in south-central Japan honor the American inventor of the incandescent lamp?

Because, the Japanese remind us, Mr. Edison, after a long search for a suitable filament for his lamp, found that a strip of charred bamboo from the Iwashimizu grove would glow without being consumed when an electric current passed through it. That was in 1880, and since then the electric lamp has been taken to every part of the known world.

Bamboo is no longer used as a lamp filament, but it still plays such a large part in the ordinary daily life of the Japanese that the Edison memorial might be considered a tribute to the versatility of this skyscraper of grasses as well as to inventive genius.

Reaches Height of over 100 Feet

Although it may be disguised through carving, trimming, polishing, painting, or shellacking, bamboo is used by the Japanese in such varied and contrasting forms as a jewel box, a vegetable, a house, chopsticks, paper, a bucket, a ship's mast, a knife, a whetstone to sharpen knives, a bird cage, a rope, a pen, a fence, a garden rake (see illustration, page one), a cane, a pillow, a raincoat, a ladder, a hat, and, indeed, what not!

If anyone declared that there was a country where grass grew over 100 feet tall, where grass stalks were a foot through, few would believe him. Yet that is true in Japan. Bamboo can claim to be the "big brother" of the famous grass family. Blue grass, quack grass, cat-tails, corn, wheat, rice and sugar cane are all relatives of bamboo.

While the height of 120 feet is attained by bamboo, that record has been achieved by only one of hundreds of species. Another bamboo growing in cold Hokkaido creeps over the ground, forming a reedlike, rank-growing greensward. Another kind provides a decorative plant for Japanese homes. The usual barnyard and forest variety in Japan and China grows 40 to 60 feet high, with a diameter of about 6 inches.

Almost Hear It Grow

Perhaps bamboo was the inspiration for the story of Jack and the Beanstalk. Like the famous corn of Iowa one can almost hear it grow, and one can certainly see it grow. There are reports of bamboo shooting up three feet in 24 hours. In fifty days it can grow 20 feet high. But Jack would be a foolish boy to climb the shoot too soon, because in its early green days a slight shake will bring it down on the shaker's head.

Bamboo grows from Africa to the Philippines, from northern Japan, where snows sometimes crush it, south to Australia. It has been successfully introduced into South and Central America and into the United States in California and throughout the south.

Note: See also "New Jersey Now!" (Edison's workshop) *National Geographic Magazine*, May, 1933; "The Warfare of the Jungle Folk," February, 1928; "Life Afloat in China," June, 1927; "Marching Through Georgia Sixty Years After," September, 1926; "Experiences of a Lone Geographer," September, 1925; "The Empire of the Risen Sun," October, 1923; "Some Aspects of Rural Japan," September, 1922; and "Formosa the Beautiful," March, 1920.

See also in the GEOGRAPHIC NEWS BULLETINS "More Uses for Bamboo, Skyscraper of Grasses," week of October 2, 1933.

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so that the falcons, when freed, could swoop down upon the birds, rabbits or other game flushed by the dogs.

Falcon training is a tedious procedure, requiring great skill and patience. The birds are first hooded, and placed in a dark room. They are carefully fed as the room is made lighter and their hoods removed for brief periods, until they are trained to eat in daylight. Meanwhile the birds are taught to know and obey their masters' voices and signals.

Note: See also "The Eagle, King of Birds and His Kin," *National Geographic Magazine*, July, 1933; "On the World's Highest Plateaus" and "Crusader Castles of the Near East," March, 1931; "The Desert Road to Turkestan," June, 1929; "By Coolie and Caravan across Central Asia," October, 1927; "The Road to Wang Ye Fu," February, 1926; "Tiger-Hunting in India," November, 1924; "Falconry, the Sport of Kings," December, 1920; and "Here and There in Northern Africa," January, 1914.

Bulletin No. 4, February 25, 1935.

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FALCONRY, AS IT IS PRACTICED IN RUSSIAN CENTRAL ASIA

Hunting eagles are used by tribesmen on horseback. Note the heavy gloves used as perches and the tiny hoods on the heads of the birds. The hood will not be removed until the quarry is sighted.

© *E. M. Newman*

BAMBOO SCAFFOLDING SUPPORTS A STEEL BRIDGE IN CONSTRUCTION

More convincingly than many statistics this photograph illustrates the strength of this skyscraper of grasses. Japanese railroad engineers are faced with many problems because their country is so full of sharp ravines and steep hills.